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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/582,482 10/13/00 DEROSE

R PH 97089

EXAMINER

HM12/1026

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MARY, I  
ART UNIT

PAPER NUMBER

1651  
DATE MAILED:

*5*  
10/26/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.  
**09/582,482**

Applicant(s)  
**Derosé et al.**

Examiner  
**Irene Marx**

Art Unit  
**1651**



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some\* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)                      18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_                      20) ☐ Other: \_\_\_\_\_

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3, 5-7, 9-10 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Suemori *et al.* (1995)..

The claims are directed to the enzymatic bioconversion of 4-hydroxypyruvate (HPP) into 4-hydroxyphenyl acetate and the enzymatic bioconversion of 4-hydroxyphenyl acetate (HPA) into homogentisate (HMO).

The reference discloses the enzymatic bioconversion of 4-hydroxypyruvate (HPP) into 4-hydroxyphenyl acetate and the enzymatic bioconversion of 4-hydroxyphenyl acetate (HPA) into homogentisate (HMO), using *R. erythropolis*. See, e.g., page 35. That the strain uses HPP or HPA as the sole carbon source is taught on page 33, last paragraph.

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suemori *et al.* (1995) taken with Suemori *et al.* (1996) and Hareland *et al.*.

Suemori *et al.* (1995) discloses the enzymatic bioconversion of 4-hydroxypyruvate (HPP) into 4-hydroxyphenyl acetate and the enzymatic bioconversion of 4-hydroxyphenyl acetate (HPA) into homogentisate (HMO), using *R. erythropolis*. See, e.g., page 35. That the strain uses HPP or HPA as the sole carbon source is taught on page 33, last paragraph. In addition, Blakley *et al.* teach the enzymatic bioconversion of 4-hydroxypyruvate (HPP) into 4-hydroxyphenyl acetate using an enzyme produced by *Arthrobacter*, which grows on HPP as the

sole carbon source. (See, e.g., bridging paragraph between col. 1-2, page 1129), and Suemori *et al.* (1996) and Hareland *et al.* teach the enzymatic bioconversion of 4-hydroxyphenyl acetate (HPA) into homogentisate (HMO), using *Pseudomonas acidovorans*, for example. (See, e.g., Suemori *et al.* (1996), page 133-134, and Hareland *et al.*, page 273.

Regarding inhibitors, Hareland *et al.* discusses HPP oxidase inhibitors at page 279, Figure 7. Clearly some activity remains in every instance.

Accordingly, one of ordinary skill in the art would have had a reasonable expectation of success of using the teachings of the references to bioconvert 4-hydroxypyruvate enzymatically to homogentisate..

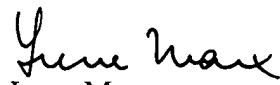
Therefore, it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the process of Suemori *et al.* (1995) by using further enzymes from other microorganisms for the hydroxypyruvate (HPP) into 4-hydroxyphenyl acetate and the enzymatic bioconversion of 4-hydroxyphenyl acetate (HPA) into homogentisate (HMO) for the expected benefits of maximizing the yield of this valuable compound useful in a variety of pharmaceutic and industrial applications.

Thus, the claimed invention as a whole was clearly prima facie obvious, especially in the absence of evidence to the contrary.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irene Marx whose telephone number is (703) 308-2922. The examiner can normally be reached on Monday through Friday from 6:30 AM to 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn, can be reached on (703) 308-4743. The appropriate fax phone number for the organization where this application or proceeding is assigned is (703) 308-4242.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Customer Service whose telephone number is (703) 308-0198 or the receptionist whose telephone number is (703) 308-1235.

  
Irene Marx  
Primary Examiner  
Art Unit 1651